Total E&P USA, Inc.
Mississippi Canyon Block 243, Well No. A005
OCS-G 19931

The Matterhorn field is a multi-layered Pliocene age reservoirs that were deposited as part of a Mass Transport Complex.

- The reservoirs are currently identified as the A, B, C, D and E levels.
- The A, B, C, and E levels are hydrocarbon bearing.
- The A-sand is the primary objective and represents over 70% of the 2P reserves.

Ten producer and injector wells were drilled between December 2001 and October 2002. Well completion activities commenced in September 2003 after the installation of the TLP (August 2003). All wells completions include frac-packs and with the potential for gas lift injection.

Matterhorn field development wells were drilled as follows:

- 4 A-sand oil producers (A2, A4, A5, A10),
- 1 A-sand water injector (A6),
- 1 C-sand oil producer (A3),
- 1 C-sand gas producer (A9),
- 1 E-sand gas producer (A7)

A2 well was shut-in since April 2007, due to sanding problem. The well was intervened 3 times for start-up production again but all were failed and currently it is being prepared for side track.

Well A5 has been producing since July 2004. The well was shut in 2 times for hurricanes - Ivan (September 2004 to April 2005) and Katrina (June 2005 to April 2007). The cumulative production as of September 19, 2007, just before the well was shut-in due to slugging and sanding issue was 515 Mbbl of oil and 521 Mscf gas. Before shut-in, this well was producing 744 STB/D with a GOR of 1640 SCF/STB and water cut of 74%.

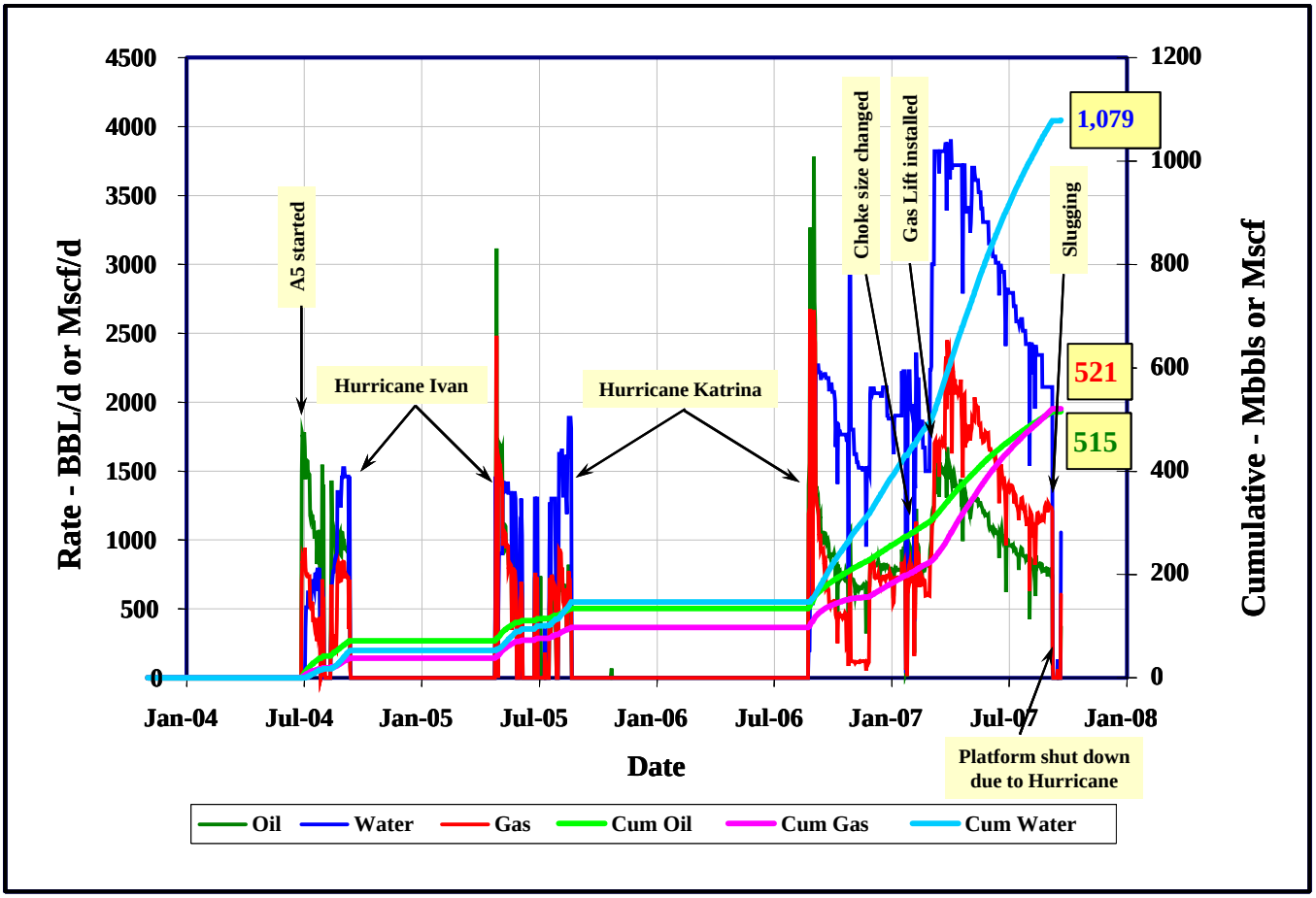

Fig. 1 — Matterhorn A-5 production performance

On September 17 to 18 2007, the well was slugging while flowing through low pressure system with approximately 350 psi amplitude at BHP. The well produced heavy solids and pad build up then it was shut-in on September 18. First attempt to bring the well back on production was on September 26, it was unsuccessful. It was also observed mal-functioning in gas-lift system.

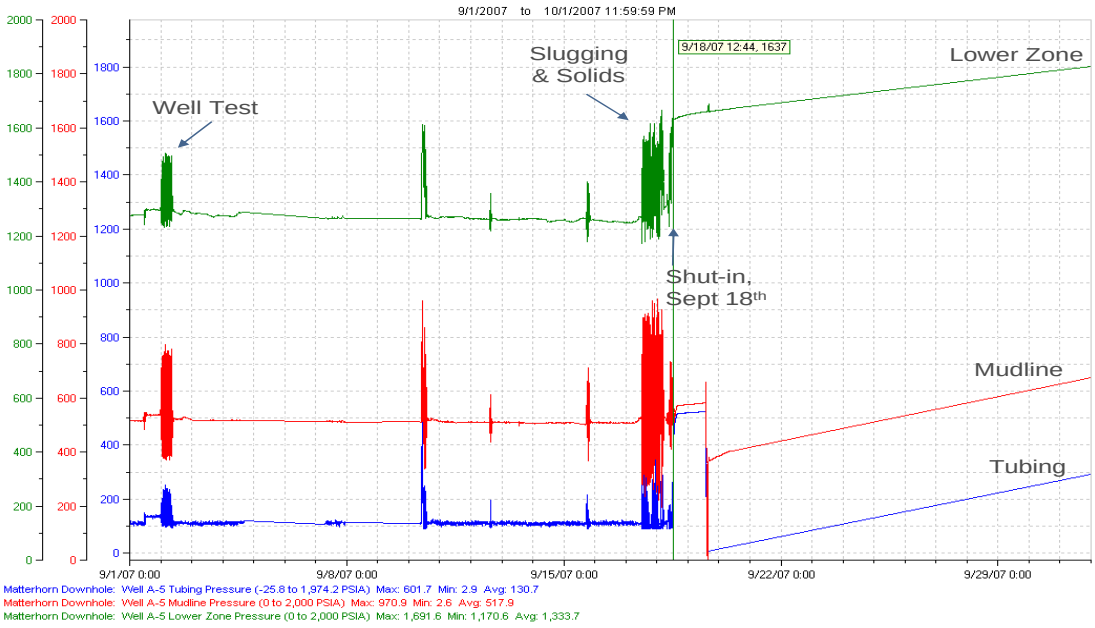

Fig-2 Well Test before A5 well shut-in

Currently A5 well is shut-in. An intervention plan is being prepared to check well physical status (tubing integrity), top of sediment depth and gas lift valves functionality. Current states of the studies indicate that the well is unlikely to put back on production if re-open the well.

According to PRIME 2008 reserves evaluation prior to well shut-in, the remaining reserves were 29 Mbbl oil and 44 Mscf gas (38 Mboe).

Due to sanding problem, very limited PRIME reserves left in A5 well and A2 well interventions experience the economics for intervention is un-favorable and it was decided to plug back A5 and will use A5 well-bore for side-track to A2 Intermediate fault block, located between A2 and A5 fault blocks, south of current A5 well (fig.3). The A5 side track well will be used as water injector for A2ST and/or A4 well blocks for pressure maintenance to improve reserves recovery.

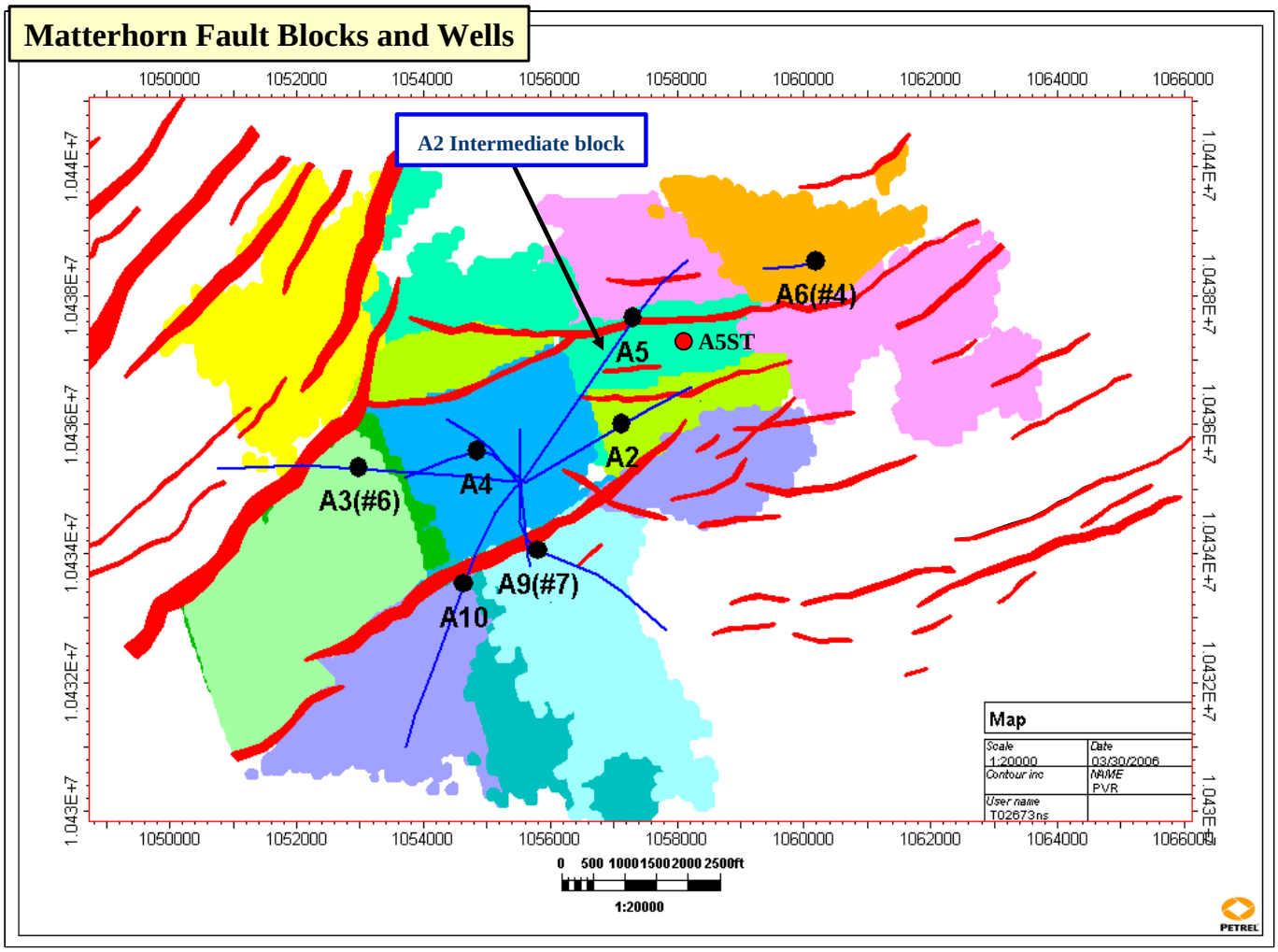

Figure-3 Matterhorn Fault Blocks and Wells